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ABSTRACT

Parental choice represents a promising approach to school improvement; it eliminates the excessive regulation, inefficient operation, and ineffective service that characterize the public monopolies that American schools and school systems have become. However, school reformers should bear in mind the following key points: (1) school performance can be easily undermined by well-intentioned reform unless schools are given the autonomy to develop their organization themselves; (2) discretion and authority for decision-making should be given to the schools; (3) school competition and parental choice, not administrative accountability, are likely to encourage the development of autonomous schools that perform effectively; and (4) schools must be freed from the control of central education authorities. The following issues of interest to politicians, journalists, administrators, and educators are discussed: (1) recent trends in learning, student achievement, and school performance; (2) the relationship between school organization and school performance; (3) the organizational characteristics of effective schools; (4) the importance of autonomy from outside authority; (5) the consequences of the many school reforms and improvements of the 1980s; (6) promising approaches to school improvement; (7) the operation, effectiveness, and outcomes of a system of competition and choice; (8) the problems of a system based on the demands of parents and students who do not really know what is best for them; (9) the cost of transporting students; and (10) participation of private schools. A list of 41 references is included. (FMW)

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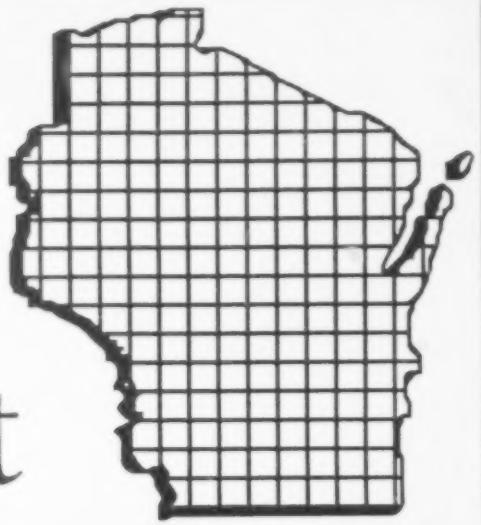

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March 1989 Volume 2, No. 3

EDUCATIONAL CHOICE

Answers to the Most Frequently Asked Questions About Mediocrity in American Education And What Can Be Done About It

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Report from the Executive Director:

Over the past year we have surveyed 3,000 Wisconsin residents on public policy issues. One issue that has been extremely popular has been educational choice. In our three surveys Wisconsin citizens have said overwhelmingly that parents should have the right to choose which schools their children attend: in January of 1988, 80% said parents should have the right; in September of 1988, 76% agreed; and in January of 1989, 79% of Wisconsin's citizens said that parents should have the right to choose their children's schools.

One of the problems with the educational choice issue has been the rhetoric and hyperbole used about it. There is very little information about how choice plans work, and one of the reasons is that there have been very few choice programs successfully implemented in this country.

No two researchers over the last decade have spent more time on education in the United States in general and on educational choice in particular than John Chubb and Terry Moe. John Chubb is a Senior Fellow at the Brookings Institution and Terry Moe is a tenured Associate Professor of Political Science at Stanford University. Their research, done for the Brookings Institution over the last several years, has led to a major book, *"What Price Democracy? Politics, Markets, and America's Schools"* which will be released later this year. The book is based on the final results of a nationwide study of 400 high schools and over 20,000 students, teachers and principals. It is one of the most comprehensive educational studies undertaken in the United States."

What they have done in this Wisconsin Policy Research Institute paper on educational choice is develop questions and answers that they most often hear concerning educational reform. They define the current problems of education and suggest how education can be improved in the United States. They have also included some data indicating where Wisconsin ranks in terms of the problems of American education. Chubb and Moe's views are based on serious academic scholarship and not on political posturing. As they point out, choice in education can only be successful if it is implemented in a way that has the best chance of success. Reform for reform's sake does not necessarily equate to successfully changing an American educational system that desperately needs to be overhauled.

Finally, we would like to acknowledge the support of the John M. Olin Foundation, which gave us funding specifically for this project.

James H. Miller

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Answers to the Most Frequently Asked Questions About Mediocrity in American Education And What Can Be Done About It

by

John E. Chubb
The Brookings Institution

and

Terry M. Moe
Stanford University

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EDUCATIONAL CHOICE

Answers to the Most Frequently Asked Questions
About Mediocrity in American Education
And What Can Be Done About It

by

John E. Chubb
The Brookings Institution

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EDUCATIONAL CHOICE[1]

A new wave of school reform is beginning to sweep the nation. From coast to coast school boards and state legislatures are looking at ways to use parental choice, an innovative concept in school organization, to improve education. This is exciting because parental choice represents a genuinely promising approach to school improvement. Properly implemented, parental choice would eliminate perhaps the most crucial source of school failure in the United States today and create powerful new forces for school success in the years ahead. But parental choice may never fulfill its promise. Like so many past waves of reform, it may wash over the country's educational systems without making a desirable difference.

Parental choice may not fulfill its promise for precisely the same reason it has so much of it. A basic premise underlying the concept of parental choice is that America's educational systems are a large part of the reason that American education is mediocre. Organized as public monopolies, America's schools and school systems have come to exhibit many of the potentially serious problems--excessive regulation, inefficient operation, and ineffective service--that are inherent in this form of organization. If these problems are to be more than temporarily alleviated, America's educational systems will need to be reorganized fundamentally. Public school monopolies will need to be opened to competition, and social control over schools will need to be exercised less through politics and central regulation and more through markets and parental choice.

There are many reasons to believe that such reforms will promote school improvement. But what makes parental choice an especially promising idea is that it tries to get at the root of the problem of educational mediocrity. Unlike so many past reforms that treated symptoms and were eventually undone by our systems of education, parental choice tries to eliminate a basic source of mediocrity, the systems themselves. By aiming to do so, however, parental choice may ultimately never be able to fulfill its great promise: really changing any system as thoroughly institutionalized as public education may be more than today's reformers are willing or able to do.

Still, parental choice has made it onto political and governmental agenda around the country, was recently endorsed by the Bush administration, and is in limited use in many places already. In the next few years, parental choice is bound to be implemented, in one way or another, in more states and districts. The opportunity does exist for parental choice to make a desirable difference in public education. But the opportunity could easily be squandered or lost if reformers fail to appreciate the basic reason that choice has so much promise--that it provides the means to restructure the way American education is provided. If reformers do not understand this, if they see choice as just another reform to be turned over to our educational systems to implement and to control, choice will not make much of a difference. Fortunately, there are many sound reasons why reformers sincerely concerned about the quality of American schools should favor systemic change, and should support a system of educational choice. Our purpose here is to supply a good number of those reasons.

We shall do so by trying to answer the questions that we most frequently are asked by politicians, journalists, administrators, and educators who have read our work on school performance and reform, or who are otherwise interested in educational choice. We have already written many professional and popular articles on the causes of effective and ineffective schools. And the Brookings Institution will shortly publish a book in which our initial findings are elaborated, and the final results of our nationwide study--of 400 high schools and over 20,000 students, teachers, and principals--are reported in detail. But that work, however accessible we have tried to make it, was not written expressly for those interested in reform, and may not directly answer some of the important questions that reformers have. Here we try to answer those questions--and to show why reformers should give choice a chance.

1. Are America's schools really performing so poorly that we must consider wholesale changes in them?

Yes. Schools in the United States appear to be doing a worse job than schools in this country did in the past and than schools in other countries are doing now. We say appear because there are many factors that influence the accomplishments of students besides schools, factors that have never been adequately controlled in analyses of American students over time or in comparisons of American and foreign students. Nevertheless, a host of relevant indicators are disturbing.

The academic achievement of American students may be significantly lower today than it was twenty-five years ago. On the best known indicator of student ability, the SAT test, the average total score of college-bound seniors fell more than 90 points between 1963 ad 1981, and remains more than 75 points below its high-water mark today.[2] Although some of this decline is explained by increases in the size of the test-taking population (a growing proportion of the population is attending college), similar declines were registered on many tests that do not present this problem of comparability.[3] Scores on the Iowa achievement tests, administered to students in grades 6, 8, 10, and 12, dropped about as much as SAT scores during the late 1960s and 1970s. The same can be said of the tests administered to students at ages 9, 13, and 17 as part of the periodic National Assessment of Educational Progress (NAEP). True, not all test trends over the last twenty-five years have been bad. The gap between minority and non-minority test scores has closed significantly. And during the late 1970s and early 1980s, depending on the test, American students posted gains in performance. Unfortunately, those gains have now stabilized and may well have ended. SAT scores, to cite a clear example of this, have not risen since 1985, and in 1988 suffered a 2-point fall.[4]

Another troubling trend is the persistently high rate of high school dropouts. Again, the facts depend to an extent on how the measurement is done. If dropouts include those young people of normal high school age who are not in school or out of school with a regular high school diploma--not equivalency credentials--the average dropout rate is currently at least 25 percent, and as much as 50 percent in some cities with high percentages of minority enrollment.[5] If the dropout rate counts only those students who have failed by their late twenties to receive either a regular diploma or high school equivalency credentials, the rate is not as bad--13.9 percent in 1986.[6] But the disturbing fact about the dropout rate is that however it is measured, it has not declined significantly since 1970. After making great strides in increasing school attendance in the immediate postwar era--half of all adults did not have a high school education in 1950--American schools have stopped making progress, far short of success, in reaching this modest educational objective.[7]

Trends aside, the accomplishments of average American students today are also very unimpressive. The NAEP classifies less than 10 percent of all 13 year-olds as "adept" at reading, and less than 1 percent as "advanced."[8] Large percentages of the 17 year-olds taking the NAEP tests answered questions requiring only basic skills or knowledge incorrectly. For example 47 percent could not "express 9/100 as a percent." Only 5 percent could calculate the cost per kilowatt on an electrical bill that charged $9.09 for 606 kilowatts of electricity. Twenty-six percent of the students did not know that Congress is part of the legislative branch of government. The same share could not define "democracy." On other nationwide tests, 43 percent of all high school students could not place World War I in even the broad historical period of 1900-1950, and 75 percent could not place Abraham Lincoln's presidency in the era, 1840-1880.[9]

By international standards these kinds of performances also fail to measure up. Eighth grade students in the United States placed next to last on a 1981- mathematics test administered in 12 advanced industrial democracies.[10] The averages of Japanese students, the highest in the world,

were about 15 percent higher than the averages of American students. In a 1982 comparison of the best math students in 11 nations, including many nations with which the United States competes economically, American students came in dead last in calculus and algebra scoring at the same level as the median of all Japanese 17 year-olds.[11] The most recent comparisons tell the same story. A new study conducted by the Educational Testing Service for the National Science Foundation and the Department of Education found American 13 year-olds performing worse or no better in science and math than students in all of the countries in the study--the United Kingdom, Ireland, Spain, Canada, and South Korea.[12] In math, South Korean students, the highest performers, are achieving levels four times those of American students--an alarming statistic indeed, but far from an isolated one. By most measures American students are doing rather badly, and their schools must bear some responsibility for this.

2. What have American schools been doing about the troubling trends in student performance?

For the last twenty years American schools have been trying in many and varied ways to improve student performance. Educational systems did not wait until the 1983 presidential report, *A Nation At Risk*, warned of a "rising tide of mediocrity" to begin seeking improvement. The national decline in test scores was apparent by the early 1970s, and efforts to turn that decline around--to boost student achievement--began in earnest at that time. For example, the 1970s saw a strong nationwide movement to hold schools accountable for student performance. The 1970s also brought innovations in curriculum, instruction, and special programs almost as numerous as the state and local systems of education that implemented them. To be sure, the 1980s saw stronger waves of reform sweep across the entire nation. But the important point is that America's school systems began introducing reforms attacking educational mediocrity a long time and have continued to pursue such reforms over the last two decades.[13]

This experience should at least make reformers skeptical of new efforts to improve education through the existing school systems. While it would be premature to pass final judgement on the school reforms of the last five years, it is fair to say that America's school systems can provide little evidence that their last two decades of reform efforts have paid off. There is also ample evidence that the dominant approaches to reform that the schools have used, approaches that rely heavily on spending and regulation, have not been working out.

It may come as a surprise to some participants in the current educational debate, but public schools are increasingly well funded institutions. From 1970 to 1987 per-pupil current expenditures 407 percent in nominal terms against an inflation rate of 177 percent.[14] That's a real increase of 83 percent. Total expenditures per student in daily attendance reached $4,300 by 1987.[15] For the sake of comparison, that amount is more than twice the cost of educating a student in a Catholic school, where research indicates the education is superior.[16] Even during the 1970s, the period of steepest decline in student achievement, per-pupil current expenditures in the public schools increased 44 percent in real terms.[17]

But what were these increased financial resources being used for? Some portion of the additional money was being used for two things that educational systems have long argued are vital to school improvement. Teacher salaries were increased and class sizes were decreased. From 1970 to 1987 the average teacher salary in the United States increased from $8,560 to $26,700, and the average ratio of pupils to teachers (a proxy for class size) fell from 22.3 to 17.6.[18] Moreover, the increases in teacher salaries purchased at least nominal gains in teacher quality. The percentage of teachers with master degrees doubled by 1983, reaching 53 percent.[19]

These "improvements" account for about half of the 83 percent real increase in per-pupil education spending over the period. Although the increase in average teacher salaries amounted to only 12 percent in real terms, the increase had to be paid to 27 percent more teachers per student. The cost of teacher salaries therefore rose 42 percent per student from 1970 to 1987. If the returns to this investment have been meager--and this apparently is so--there are several immediate reasons. One is that reductions in pupil-teacher ratios or class sizes of the magnitude achieved during the seventies and eighties simply may not produce systematic improvements in student achievement. Another is that these reductions were not achieved through careful efforts to increase student-teacher contact but rather as a by product of efforts to minimize teacher layoffs during a period of declining student enrollments. A final reason is that the higher average salaries--actually 7 percent lower during the 1970s--were not being used to attract more talented teachers into the profession but to compensate those already in the aging teaching force for increasing experience and educational attainment.

If the increased investment in teacher salaries did not pay off as hoped, however, it had, and still has, a better prospect of improving education than most of the rest of the increase in public school spending that occurred from 1970 to the present. Schools are not spending more today than twenty years ago because of better books, materials, laboratories, equipment or other obvious improvements in instructional facilities. No, at least half of the 83 percent real increase in educational spending per pupil from 1970 to 1987 was consumed by such things as more expensive employee fringe benefits (which doubled their share of school system budgets): rising "fixed costs" such as rent, maintenance, and insurance; increasing use of "auxiliary teaching services" provided by aides and counselors; and last but not least, educational administration.[20] Indeed, after teacher salaries and fringe benefits, school bureaucracy may be the single largest beneficiary of the substantial increase in educational expenditures over the last two decades.

Because of problems of data availability and comparability it is impossible to estimate with confidence the size of the real increase in all administrative costs per pupil in America's public schools since 1970. But the data that are available describe very significant growth in public school bureaucracy over the last two decades. From 1977 to 1987, when the ratio of students to teachers nationwide fell 8.4 percent, the ratio of students to central office professional personnel dropped 21.0 percent.[21] In other words, administrative employment outside of schools was growing at two-and-a-half times the rate of instructional employment inside the schools. Between 1960 and 1980 local school spending on administration and other non-instructional functions grew by 107 percent in real terms, almost twice the rate of per-pupil instructional expenditures.[22]

More instructional matters were also being taken out of the classroom: between 1960 and 1984 the number of non-classroom instructional personnel in America's school systems grew 400 percent, nearly seven times the rate of growth in the number of classroom teachers.[23] In 1983, the last date for which such figures are available, full-time classroom teachers represented barely half (54 percent) all local school employment; administrators represented 13 percent.[24] Whatever its precise magnitude, though, the recent growth in public school bureaucracy may have harmed more than helped the academic performance of schools. And, if the growth in bureaucracy was not generally beneficial, it partially explains why two decades of growth in school expenditures was not very effective.

In due course, we will provide many reasons for concern about school bureaucracy, but an immediate reason has to do with the role of bureaucracy in school reform. Two decades of school reform have substantially increased the regulation of public schools. The local public school is subject to far more regulations today than it was when the nation's educational slide began. Schools are more constrained in their use of personnel, their design of curriculum, their choice of instructional methods, their maintenance of discipline, and their provision of special programs. School reform is not solely responsible for this. Collective bargaining with increasingly powerful

teacher unions has helped to constrain schools. And the school systems, for their own reasons, have seen fit to take authority out of schools and to centralize it in school headquarters.[25] Still, from the countless special programs of the federal government--for example, compensatory education--to the curriculum specifications of state departments of education, to the implementation of these innovations by district offices, school reform has increased the regulation of local schools.

During the 1980s, moreover, this tendency has picked up pace. The powerful waves of school reform that have swept the nation since 1983 have followed well-worn paths. First, educational spending has been increased more than anyone thought possible when *A Nation at Risk* called for a long list of expensive reforms. Between 1983 and 1988 aggregate spending on public elementary and secondary education increased by $56 billion--amount greater than one percent of the Gross National Product.[26] Second, many new regulations have been written. Some of these regulations may be desirable (though research does not encourage optimism). For example, almost all states have imposed higher graduation requirements on high schools, and many states have required competency tests of new teachers. But much of the regulation--as we shall explain--has the prospect of backfiring. The increased regulation of student and teacher performance, now being widely implemented through evaluation and accountability systems composed of tests and a host of other "objective" criteria, could easily rob schools of vitality and undermine their performance. This is a fairly well-known danger, but it is a danger that educational systems, now so heavily dependent on central administration, are willing to accept. It is also a danger that politicians, ultimately responsible for these systems, can hardly avoid. With education organized as it is, politicians interested in improving school performance have little choice but to provide educational systems with more money and then try to regulate how those systems use it. Within the existing systems, reform options are limited.

3. Are these national trends in schooling and learning characteristic of education in Wisconsin, too?

There is little reason to believe that any state has substantially escaped the most disturbing developments in American education over the last two decades. In Wisconsin, average combined SAT scores are about 100 points above the national average.[27] But during the 1970s (state data on the 1960s are unavailable), when national scores fell 50 points, Wisconsin scores fell 40. During the 1980s, when national scores recovered 10 points, Wisconsin scores actually fell 3 points more. Over the last 30 years the percentage of Wisconsin's citizens with at least a high school education has never differed from the percentage in the country as a whole by more than four points.[28] Wisconsin has paralleled the national educational slide.

Wisconsin has also followed the national trends in school finance. To be sure, Wisconsin spends more per pupil than the national average; at $4,701 in 1987 Wisconsin ranked ninth among all states.[29] But Wisconsin has allocated its expenditures over time in the same troubling ways as the other states. While Wisconsin increased its real per-pupil spending 94 percent (slightly above the national average) between 1970 and 1987, it too gave teachers only a 12 percent real increase in average salaries over this period. As with the nation as a whole, some of this discrepancy can be explained by a reduction in pupil-teacher ratios (to 16.2, 20th best in the nation). But the reduction was not significantly larger in percentage terms than that for the nation as a whole. As for the other beneficiaries of Wisconsin's large increase in per-pupil expenditures, data are not readily available to analyze them. Still, it is safe to say that a significant portion of the increase went to the rising cost of bureaucracy. In Wisconsin, almost identical to the situation nationwide, classroom teachers accounted for only 59 percent of all school employment in 1983; administrators accounted for 12 percent.[30]

4. What do other researchers have to say about the recent trends in learning and schooling?

The decline (and rise) in student test scores over the last twenty-five years is one of the most researched and least understood phenomena in education. As yet, researchers have produced no simple or adequate explanation for the initially troubling, then temporarily encouraging, trends in test scores. The trends appear to be the product of many factors, some educational but many non-educational. The most important factor, accounting for perhaps a fifth of the total decline, appears to be a change in the ethnic composition of the test-taking population.[31] American schools were taking in different kinds of students, students who were more difficult to educate than students in the past. Influences in the home were also changing. The second most important cause of the decline and upturn appears to be changes in family size, larger families initially hampering achievement and then smaller families encouraging it.

It is also clear that the decline did not affect all grades equally. The decline was comprised primarily of worsening scores among students born before 1963, the "baby boom" generation.[32] As these students moved through the schools, test scores declined, pushing SAT scores down from 1964 to 1979. But as the baby boomers began to be replaced, around 1970, by a new cohort, the "baby bust" generation, test scores in the early grades began to climb. By 1980 the younger cohort, now in high school, was taking the SAT tests, and posting the modest increases in SAT scores observed during the early eighties. Unfortunately, further gains have not been posted by subsequent cohorts, leaving achievement generally below the levels of twenty-five years ago.

The significant contribution of so-called compositional and cohort effects to changes in test scores highlights the importance of factors beyond the control of schools in producing student achievement. Yet, even when the full range of non-educational factors is taken into account -- alcohol and drug use, and exposure to environmental lead (both of which had small effects on tests scores); single-parent households, maternal employment, and television viewing (none of which had any effect on test scores)--no more than a third of the variation in test scores over time can be explained.[33] That leaves a lot of room for educational factors to make a difference.

But researchers have made little progress in identifying significant educational factors. The most comprehensive study to date, by the Congressional Budget Office in 1987, found some evidence that schools might have undermined achievement by watering down the content of courses, assigning less homework, and using less challenging textbooks.[34] But the study found no impact, positive or negative, from other educational factors such as teachers' test scores, teachers' educational attainment, or state graduation requirements. The fact of the matter is, most of the relationship between schooling and learning over the last twenty-five years remains a mystery.

Some clues about the relationship can be found, however, in other kinds of research into student achievement, research that has not focused on test score trends but on differences in tests among schools at any given time. This research has reached some fairly strong, though negative, conclusions about the connection between schooling and learning. This research implies that there is no surprise in the fact that test scores declined or stagnated while school resources and certain school conditions improved. A recent survey of 147 statistical analyses of school performance, for example, found no consistently positive and significant relationship between student achievement and any of the major factors popularly assumed to influence achievement: teacher-pupil ratios, teacher education, teacher experience, teacher salaries, and per-pupil expenditures.[35] In other words, much of what school systems were doing to turn test scores around may have no systematic effect on school performance.

Nevertheless, we know that factors outside of schools do not adequately account for student achievement either. And we know from casual observation, as well as careful case studies, that some schools are much, much better than others. The challenge remains to find out why. The research in which we have been engaged takes up that challenge.

5. Why does your research have anything new to say about the mysteries of student achievement and school performance?

There are two distinguishing qualities of our research, the first having to do with the kinds of causes of school performance we are looking at, the second having to do with the data we are using to study those causes. Research into the determinants of school performance and student achievement has been dominated by what are often called input-output studies.[36] Based on the economic concept of the production function, these studies have tried to explain educational "outputs," such as student test scores, with conventional economic "inputs," such as expenditures per student, teacher salaries, class sizes, and the caliber of school facilities. The fundamental idea behind these studies is that schools, like any economic enterprise, ought to produce their products--educated students--with varying degrees of effectiveness and efficiency as the combination of capital and labor used in production varies. Years of study now suggest, however, that schools may not be like just any economic enterprise. Since the famous "Coleman Report" of 1965, input-output studies have been unable to establish any systematic relationship between school performance and a wide range of indicators of school resources.

The research that we have been doing takes a different approach than input-output studies. It focuses more on the production process itself. It considers how schools are organized and operated--in other words, how inputs are actually converted into outputs. The production process may well be more important in public education than the economic theory of production functions would suggest. Schools are not part of a market where competitive forces can be assumed to encourage managers to organize their firms to use capital and labor efficiently. Schools are part of political and administrative systems where the forces that managers--principals and superintendents--are exposed to cannot be expected to encourage efficient organization. It therefore becomes especially important in analyzing the performance of a public enterprise such as a school to study its organization. It is also important to examine those non-economic forces that lead schools to organize as they do. While our research also considers the conventional economic determinants of school performance, our emphasis is on the production process--how it works and what causes it to work in different ways. Because of this emphasis, our research may well have something new to say.

Our research is also distinguished by the data it employs. We are far from the first researchers to suggest that school organization is important, that it can help explain the weak link between school resources and school performance. Indeed, over the last ten years many researchers have completed studies that show that successful schools have distinctive organizations. Better schools appear to be characterized by such things as clear and ambitious goals, strong and instructionally oriented leadership by principals, an orderly environment, teacher participation in school decisionmaking, and collegial relationships between and among school leaders and staff. The studies that have identified these characteristics--studies known collectively as "Effective Schools Research"--have not settled the issue of school performance, however.[37] There are serious doubts about the magnitude of the impact that school organization has on school performance and, indeed, about whether organization is a cause of performance at all: healthy school organizations may be a consequence of successful students, and not vice versa. It almost goes without saying that Effective Schools Research has provided few clues about the causes of school organization; the focus of that research has been on organizational consequences.

A primary reason for the doubts about Effective Schools Research is the methods that have been used in most of the studies. Research has been dominated by qualitative case studies of small numbers of schools, usually reputed to be unusually successful. Those few studies that have used somewhat larger numbers of schools and employed quantitative analysis have still not examined representative samples. From one study to the next there has been considerable variation in the particular organizational characteristics said to be important. And the conclusion that organization is important, however frequently it has been drawn, is still based substantially on impressionistic evidence, uncontrolled observation, and limited numbers of cases. In sharp contrast, input-output research, however negative its conclusions, is based on rigorous statistical analyses of hard data in hundreds and thousands of schools nationwide. There is consequently more reason at this point to believe that the relationship between school resources and school performance is unsystematic than to believe that school organization provides a strong link between the two.

In our research we explore how strong that link may be by employing the methods that have been used in input-output analyses. Unlike most Effective Schools Research, we investigate the resources, organization, and performance of a large, random, national sample of schools in which all characteristics are measured with quantitative indicators, all relationships are estimated with statistical controls, and all inferences are careful to try to distinguish causes from effects.

Our data base is the result of merging two national surveys of American high schools--High School and Beyond (HSB), a 1980 and 1982 panel study of students and schools, and the Administrator and Teacher Survey (ATS), a 1984 survey (which we helped design) of the teachers and principals in half of the HSB schools. The merged data set includes over 400 public and private high schools--the privates providing a valuable look at school organization in a market setting--and approximately 9,000 students, 11,000 teachers, and the principals in every school in the sample. While no piece of research is ever definitive, and this is certainly true of research as new as ours, our work is a step in the right direction methodologically, and therefore a contribution that may well make a difference.

6. What did you find about the relationship between school organization and school performance?

If school performance is gauged by student achievement, school organization is a major determinant of effectiveness. All things being equal, high school students achieve significantly more--perhaps a year more--in schools that are "effectively" organized than in schools that are not. Indeed, after the aptitude or entering ability of the student, no factor--including the education and income of the family or the caliber of a student's peers--may have a larger impact on how much a student achieves in high school than how a school is organized to teach its students.

We reached these conclusions after analyzing the gains made by roughly 9,000 students on standardized tests--in reading, writing, vocabulary, math, and science--administered first during the sophomore year of high school and then again at the end of the senior year. It is important to recognize that by analyzing the gains on these tests, as opposed to analyzing only the final level of achievement on the tests, we have probably improved our chances of measuring the effect that schools actually have on achievement. Most studies of student achievement analyze test score levels, not gains. By high school, however, levels of achievement are heavily influenced by a host of factors preceding the high school experience. Our study looks at a variety of factors besides the school experience too, but our measures of student achievement are not contaminated by prior influences; the gain scores reflect only the learning that has taken place during the high school years.

The influences on student achievement, besides school organization, that we examined included several that are generally beyond the control of schools--the education and income of the parents,

the race of the student, the education and income of the families in the school (a proxy for peer group influences), and the aptitude of the student. We also examined some of the conventional influences over which the school has control--pupil-teacher ratios, expenditures per student, teacher salaries, graduation requirements, homework loads, disciplinary policies, and more. When all of these influences were examined simultaneously, and in various combinations, most did not make a significant difference for student achievement. School resources and prominent school policies were not systematically related to student performance. This is consistent with the results of countless input-output studies that precede ours.

In the final analysis, only four factors consistently made a significant difference in achievement gains by high school students. In order of importance they were student aptitude, school organization, family background, and peer group influence. Over a four-year high school experience the difference in achievement that would be expected to result from being in the top quartile rather than the bottom quartile on each of these factors, all other factors being equal, are as follows: aptitude, one-and-a-half years of achievement; school organization, a little more than one year of achievement; family background, one year of achievement; and peer group influence, less than a half year of achievement. In short, school organization may be as important to student achievement as the influence of families, a major influence indeed.

7. What are the organizational characteristics that seem to make schools effective?

Three general characteristics most distinguish effective school organizations from ineffective ones. The first is school goals. The objectives of effective schools are clearer and more consistently perceived than the goals of ineffective schools. The objectives of the more successful schools are also more academically ambitious. More than twice as many effective schools as ineffective ones make "academic excellence" their top priority. In contrast, the unsuccessful schools place more priority than do the successful ones on such objectives as basic literacy skills, good work habits, citizenship, and specific occupational skills. Overall, effective organizations seem more likely to possess a sense of "mission," something that many other observers of effective schools have also noted.

The second distinctive characteristic of effective organizations is leadership. The better schools have principals who are stronger educational leaders. Specifically, effective organizations are led by principals who, according to their teachers, have a clear vision of where they want to take the school and the firm knowledge to get the school there. This is consistent with the sense of mission that characterizes school goals. But there is more to effective leadership. There is a strength in the better principals that comes through in their reasons for wanting to head a school. Principals in effective schools are much more likely than their counterparts in ineffective schools to report that they took the job of principal to gain control over the educational performance of the school--over personnel, curriculum, and other school policies--and much less likely to admit that they simply preferred administration to teaching. In much the same vein, the successful school principals had more teaching experience and less ambition to leave the school for a higher administrative post. Overall, the principals in the successful schools seemed to be more oriented by teaching and less by administration. The successful principals seemed more like leaders, the less successful ones more like managers.

Finally, effective organizations were more professional in all of the best senses of that much abused term. Principals in the effective schools held their teachers in higher esteem and treated them more as equals. Teachers were more involved in decisions about various school policies and they were given more freedom within their classrooms. Teachers also treated each other more like colleagues. They cooperated with one another and coordinated their teaching more regularly, and held each other in relatively high regard. The teachers in effective schools behaved in another

important way like professionals too: they came to school regularly and presented less of an absenteeism problem for principals. Finally, the teachers in effective schools exhibited stronger feelings of efficacy, beliefs that they could really make a difference in the lives of their students. And it is no wonder. In a school where everyone is pulling together, working as a team--the concept we think best captures the effective school--and in which teachers are trusted and respected to do their best, it stands to reason that teachers would tend to believe that they can actually succeed.

8. How do you know that schools with effective organizations haven't simply benefited from teaching bright kids or receiving the support of educated parents? In other words, how do you know that effective organizations promote student achievement rather than the other way around?

There are several reasons why we are confident that effective school organization means a great deal for student achievement. The first is that in our analysis of student achievement, school organization competes directly with many characteristics of student and family background to explain the observed changes in test scores. In this competition school organization fares very well, coming in second. Now, it is true that school organization may be receiving undue credit for influences on test scores that are really the result of student body influences working through the school organization. But it is also true that student bodies may be receiving undue credit--credit that should go to school organization--for boosting test scores. After all, it is school reputations for organizational effectiveness that lead many parents to buy homes in the jurisdictions of better schools, and that, in turn, provide effective organizations with better students.

So, how should the alternative forms of "undue credit" be corrected? Should the influence of school organization be downgraded because organization may be influenced by student body characteristics? Or should the influence of organization be upgraded because student body characteristics are influenced by school organization? The correct answer is that both should be done simultaneously. Unfortunately, such a correction is statistically impossible with our data. We must, therefore, be content that our estimate of the effect of organization on achievement strikes a happy medium between over- and under-estimation.

But there is another reason for confidence that school organization makes a substantial independent difference for school performance. That is, we analyzed a variety of possible causes of school organization and found that the characteristics of students and parents were not the most important sources of effective or ineffective organization. A school may be effectively organized whether it is teaching bright students or educationally disadvantaged students, and whether it is supported by educated parents or scarcely supported by parents at all. As a result, a properly organized school can have a positive, independent effect on students of any kind.

9. What causes some schools to be more effectively organized than others?

This is a very important question, and one that has been asked too seldom. If school performance is ever to be lastingly improved, it will not be enough to know what effective schools look like. Knowing that effective schools should have clear goals, strong leadership, and a professional structure will not necessarily help reformers make schools more effective. It may not be possible, for example, to train principals to be stronger educational leaders, or to encourage them to treat teachers like colleagues or true professionals. Yet reformers in every state are trying to do precisely these kinds of things today. Based on Effective Schools Research, many state departments of education have established effective schools programs to encourage or force their

schools to develop more effective organizations. Schools are being instructed to raise their expectations, to establish priorities, to make decisions more cooperatively, and so on. But this approach assumes that schools have become poorly organized because they did not know any better. Once schools know how to organize themselves more effectively, they will do so --or so it is assumed. This assumption, however, is likely to be very wrong.

Unlike Effective Schools Research, which has shown little interest in those things that might cause schools to become ineffectively or effectively organized in the first place, our research is extremely interested in the determinants of school organization. We are struck by the fact that many schools in this country have become effective organizations without the benefit of any research showing schools the way. By the same token, we find it hard to believe that many of the worst school organizations in this country have reached their sad state because their superintendents, principals, or teachers did not know any better. More likely, schools in this country have organized effectively or ineffectively in response to various political, administrative, economic, and educational forces that demand organizational responses. If this is correct, the key to school reform is understanding how those forces work, and then making adjustments to them.

We examined simultaneously the effects of a large number of such forces on school organization. Many mattered little or at all. For example, when all else is taken into account, higher teacher salaries and more expenditures per pupil do not produce more effective school organizations. Even if expenditures are used to reduce student-teacher ratios, there is no significant impact. More effective organizations do not have more teachers per pupil, or by extension, smaller classes. Ultimately, more effective organizations are distinguished from less effective ones by but two kinds of forces. One kind emanates from the students in the school, the other kind is applied by politicians and administrators outside of the school.

High schools are much more likely to organize effectively--to set ambitious priorities, practice vigorous educational leadership, and operate professionally--if their students are well-behaved, have above average entering ability, and come from relatively well-educated and affluent families. If the students in a school exhibit any one of these traits, the organizational effectiveness of that school is likely to rank one or even two quartiles above that of a school whose students do not have these traits. This is not to say that the impact of school organization on student achievement is artificial, however. Students still register higher gains in schools that are effectively organized, all things being equal. But a school is more likely to get organized to provide this academic boost if its students are more academically inclined to begin with.

Not too much should be made of the organizational advantage of educating bright kids, however. The single largest determinant of whether a school is effectively organized is not associated with the caliber of the students in the school but with the strength of the pressures outside the school. Specifically, the more a school is subject to the influence of administrators, unions, and indirectly, school boards, the less likely the school is to be effectively organized. Schools that have relatively little control over curriculum, instruction, discipline, and especially hiring and firing are likely to fall more than two quartiles in overall organizational effectiveness below schools with relatively great controls over these matters. This is true, moreover, when the influences of students and parents are held constant. Schools with less academically able students can be organized quite effectively, and succeed, if they are given the freedom by politicians and bureaucrats to do so!

10. Why is autonomy from outside authority so important for effective school organization?

Autonomy is vital for many reasons, but two seem to be paramount. First, and clearly most important, if schools have control over their personnel, they are far more likely to develop many of the qualities of organizational effectiveness than if they do not. A principal who has the power to

staff a school--to hire teachers, and if need be, fire them--is likely to fill the organization with teachers whose values, ability, methods, and behavior are compatible with his or her own. In other words, such a principal is likely to create a team whose members are deserving of trust. Team members are therefore more likely to be involved in school decisions, to be delegated more authority, and in general to be treated like colleagues. Because of all of these influences, teachers are also likely to treat each other more like colleagues. The end result, then, of vesting more control over personnel in principals is to increase the prospect that a school will pursue a coherent mission as an integrated, professional team.

The result of withholding control over personnel from principals is much the opposite. Stuck with staff that have been assigned to the school and cannot be easily removed, the principal will discover that teachers disagree with his or her educational objectives, and with the objectives and methods of each other. In this setting of conflict and disagreement, which the principal ultimately can do little about, the principal is going to be reluctant to involve teachers in school decisionmaking or to delegate additional authority to them. Teachers are also less likely to feel great affinity for each other and therefore less likely to work together closely. The school will tend, then, not to operate as a professional team but as a bureaucratic agency managed by explicit rules and careful supervision. Unfortunately, the personnel systems of many public schools leave principals so little discretion that the schools do tend to operate much like other, less professional government agencies.

Personnel provides but the most important reason that autonomy is vital to school organization, however. Another reason, close in importance, is that successful teaching is probably more art than science. In any case, teaching is a highly contingent process, its results depending on the interaction of the methods used and the students those methods are used on. No one method, employed inflexibly, will work for all students. Unfortunately, when officials outside of schools try to direct teaching, they inevitably push teachers toward the utilization of one best method. In the extreme, the well-intentioned regulation of curriculum and instruction so limits teacher flexibility that the quality of teaching deteriorates for many students, especially those whose needs are not met by the one best method. And this is not just a hypothetical problem: many researchers have identified overregulation of curriculum as a serious problem in today's schools.[38] Ours is hardly the only research to find that schools with too little autonomy from external control often perform badly.

11. Since school-level autonomy seems to be so important for effective school organization and performance, how is it that some schools have autonomy, but most do not?

To aid us in figuring out how America's schools might be given more autonomy, we investigated why some schools already enjoy it. Much as we concluded when thinking about how schools could be led to organize effectively, we decided that school autonomy was probably not a virtue that would come to schools just because researchers or reformers thought it was a good idea. Rather, it seemed that autonomy stood a better chance of being increased if the forces that reduced it were understood and then attacked. Thus, we examined a number of factors that we suspected would influence the degree of autonomy that a school would experience. The results support two generalizations, one about public schools, the other about private.

Public schools are given relatively high levels of autonomy only under very special conditions. All things being equal, public schools will fall at least two quartiles below private schools in autonomy from external control. To enjoy the kind of autonomy that the private school receives on average, the public school must exist in the most favorable of circumstances. To be permitted to control its own destiny, the public school must be located outside of a large city in a suburban school system. Its students must be making significant gains in achievement, and its parents must be in close

contact with the school. In other words, when the public school is performing well, is being monitored by parents, and is not part of a large administrative system, it will be given relatively great control over its policies, programs, and personnel.

Unfortunately--and predictably--the public schools that now enjoy autonomy are not the ones that are most in need of improvement. And the inner city public schools that most desperately require improvement are the ones who have so little of the autonomy they arguably need. It may even be that urban public schools are caught in a vicious cycle of deteriorating performance, increasing control, and eroding organizational effectiveness. Under political pressure to do something about city schools that are failing, school boards, superintendents, and administrators tend to take the only actions that they can. They offer schools more money, if it is available, but then crackdown on underachievement with tougher rules and regulations governing how teachers must teach and what students must "learn." But crackdowns are seldom carried out deftly. And any intervention that responds clumsily to the real needs of teachers and students may undermine school organization rather than build it up.

Private schools, even in urban systems with high percentages of poor students, generally do not face these troubling pressures. Private schools, almost regardless of their circumstances, tend to be free from excessive central controls by administrators, boards, and unions. The main reason appears to be market competition. In a process much the reverse of the one in public schools, where political pressure leads to an increase in central control, competitive pressures lead to an increase in autonomy in private schools. To stay in business private schools must satisfy parents, and satisfy them more than the public schools or alternative private schools. Private schools are therefore forced to organize themselves in ways that above all else respond to the demands of parents. One thing this clearly means is that private schools must vest a lot of control over vital school decisions--about personnel and curriculum, for example--at the school level where the wishes of parents can be more clearly perceived and accommodated. Strong external control is incompatible with the imperative that private schools either satisfy parents or lose them to other schools. In contrast, strong central control fits public schools very nicely. Public schools need not satisfy parents first; indeed they must ensure that parents are not satisfied at the expense of other legitimate groups such as unions, administrators, and various special interests. Policymaking is therefore taken out of the public schools themselves where parents would have a political edge.

Because public schools are ruled by politics, and private schools by markets, public schools may be at a decided disadvantage in developing effective organizations and promoting student achievement. Private schools, without the benefit of any reform at all, are encouraged by competitive forces to operate autonomously and to organize effectively. And indeed, the private schools in our study have more of the attributes of organizational effectiveness than public schools, regardless of the quality of their students. Public schools, however, are usually not granted the autonomy that they need to organize effectively--political forces discourage this--and must therefore be periodically reformed from the outside.

12. What does your research suggest will be the consequences of the many school reforms and improvements of the 1980s?

Our research suggests that the school reforms that have been pursued so aggressively during the 1980s will have disappointing results. We offer this assessment with some caution because our research does not examine the consequences of specific reform efforts. Nevertheless, it is fair to assume that the consequences of reform will depend on how reform affects those attributes of schools that are most strongly related to student achievement. Most current reforms either fail to influence school characteristics that seem to matter most for student achievement or influence those characteristics in counter productive ways.

Public school reform in the 1980s has had essentially two thrusts, one to spend more money and the other to impose more standards. Thus, teacher salaries and per-pupil expenditures have been increased by enormous amounts (as we explained in question 2), and graduation requirements, teacher certification and performance standards, and student achievement objectives have been raised substantially too.

Spending reforms obviously do not have a very good track record. For example, per-pupil expenditures increased nearly 50 percent in real terms during the 1970s (see question 2) while high school achievement slid downward. If our research is correct, the record of the 1970s will be repeated. The amount that a school spends on each pupil or on each teacher is unrelated to the amount that students in a school achieve, all things being equal. Many schools succeed in this country with relatively low levels of funding and many others fail with relatively high levels of funding. Because so many forces more powerful than money influence how a school performs, spending more money on schools will probably not transform the bad ones into good. In the very long run higher teacher salaries ought to attract more talented people into teaching and provide some overall improvement. But there is no evidence that in the short-run higher teacher salaries, paid to poor and excellent teachers alike, will spur improvement. And, there is little evidence that the small reductions in class size that might be purchased with greater school revenue will boost achievement either. Schools can succeed with relatively high pupil-teacher ratios and fail when those ratios are low. In sum, if schools are given more funds to employ in essentially the same ways funds have been employed in the past, there is little reason to believe additional spending will bring about improvements.

Of course, many school reformers are wary of throwing good money after bad. They recognize that past investments in public schools have not produced their expected returns. Many reformers understand that giving poor schools and incompetent teachers more money will not turn either around. Reformers during the 1980s have therefore gotten tough with the schools, holding them to higher standards and telling them more explicitly what to do. Some of this may be helpful. It is hard to argue with competency tests that prevent the truly unprepared from becoming teachers.

But most of the well-intentioned crackdown that reformers have launched on mediocrity during the 1980s may not help at all. Our research shows that student achievement is not promoted by higher graduation requirements or more demanding homework policies--two favorite targets of school reforms. And more fundamentally, our research shows that the regulation of teachers and teaching can be detrimental to school performance. Current reforms employ more extensive teacher evaluation systems, use more frequent standardized testing to keep track of student performance, and impose more detailed curricula and instructional methods. Yet, these are precisely the kinds of reforms that can rob schools of the autonomy that they need to organize and perform effectively.

School reformers are not ignorant of the dangers of excessively regulating schools, however. And some reformers are taking small steps to provide schools with autonomy. School systems are experimenting with school-based management and other forms of decentralization. For example, the entire Chicago school system is converting to a system of community control over schools. There are several problems with these efforts, however. First, the so-called autonomy that schools are being given is being circumscribed by regulations governing precisely how decentralized policies must be made--specifying, for example, decision processes and participation rules. Second, the use of autonomy is being monitored with elaborate performance accountability systems--for example, employing standardized tests--that threaten to distort how autonomy is used. Finally, autonomy is always vulnerable to political pressures that it be reduced. If schools utilize their increased authority in ways that are unwise or displeasing--and some inevitably will--school authorities such as superintendents and school boards will be pressured to intervene in school decisionmaking and to return to the pre-autonomy ways of doing things. Increased school autonomy is simply not consistent with public education as it is now organized. Unfortunately, autonomy, not spending and regulation, seems to hold the key to school improvement.

13. Does your research suggest any promising approaches to school improvement?

Our research suggests that the key to better schools is more effective school organization; that the key to more effective school organization is greater school autonomy; and finally, that the key to greater school autonomy is school competition and parental choice. We therefore believe that the most promising approaches to school reform are those that promote competition between schools and that provide parents a choice among schools--for example, magnet school programs, open enrollment systems, and voucher or scholarship plans. Not just any reform that increases competition and choice will do, however. To succeed, an arrangement employing competition and choice must ensure that the systemic forces now discouraging autonomous and effective school organization are fundamentally weakened. In effect, this probably means restructuring today's systems of public education.

The greatest virtue of a system of competition and choice, and the virtue that sets such a system apart from current systems of public education, is that competition and choice make it possible to provide schools autonomy without relinquishing accountability. In a school system organized according to principles of competition and choice, the responsible government authority can permit schools to make virtually all decisions for themselves yet be confident that schools will not generally abuse the vast discretion delegated to them. If the principles of competition and choice are followed closely, schools are not guaranteed students or funds: enrollments and financial support come only when students and their parents choose to use particular schools. Schools that use their control over personnel, curriculum, discipline, and instruction to organize in ways that are displeasing to parents and students--and to teachers--will quickly find themselves struggling to stay open. Schools that use their authority to organize effectively, to provide the kinds of educational gains demanded by parents, will be well-supported. In a system of competition and choice, autonomous schools, schools that are substantially free from top-down regulatory control, are nonetheless held accountable for their performance.

In public education as it is currently organized autonomy and accountability work at cross-purposes. Efforts to enhance autonomy come at the expense of accountability, and vice versa. If public education were reorganized so that schools were forced to compete for the support of parents, who had the freedom to choose, autonomy and accountability would work in harmony. Competitive pressures would encourage educational authorities to delegate power to the school level where it could be used most effectively to meet the demands of students and parents. The ability of parents to leave schools that were not meeting their demands would work as a powerful force on schools, holding them accountable for their performance.

To be sure, the accountability that would be provided by market forces in a reorganized system is different from the accountability provided by administrative and political forces in the current systems. In a system of competition and choice, schools would be more accountable to students, parents, and teachers, and less accountable to bureaucrats, politicians, and the interest groups that influence them. While that may not be the kind of accountability that school reformers want, it is the only kind of accountability that is fully consistent with school autonomy, and by extension, with more effective school organization and performance.

14. In practical terms, how would a system of competition and choice work?

In an ideal world, one where a new system of public education could be created from scratch and previous systems were of no consequence, a system of competition and choice would utilize educational vouchers or scholarships. The government would still fully fund education with tax revenues, but the money would be distributed to students and their parents, in the form of

vouchers or scholarships, and not distributed to the schools. The schools would receive their funds when they cashed in the vouchers from the students they were able to attract to their school. Beyond acting as a public education bank of sorts, the government's direct role in the system would be limited. The government would establish the criteria that a school would have to meet in order to qualify for vouchers --obviously, racial non-discrimination in admissions, and probably basic accreditation standards having to do with course offerings and graduation requirements. But most of the rest of the decisions--about curricula, personnel, discipline, instructional methods, priorities, etc.--would be made by the schools themselves--teachers and principals--responding to their clients. While the government might want to be more involved in decisionmaking for schools, and might well get more involved, the government would be under strong pressure from most schools and parents, for whom competition and choice would be working effectively, not to intervene.

Unfortunately, we do not live in an ideal world where we can organize public education anew. This means that we may need to employ less sweeping reforms than vouchers to implement competition and choice. The leading alternatives include district- or state-wide open enrollment systems and magnet schools. These practical alternatives to vouchers can work. Mechanisms other than vouchers can bring about many of the changes in school organization and performance generally promoted by competition and choice. But if the practical alternatives to vouchers are to make a significant difference in school performance they too must make basic changes in the way our systems of education are currently organized. They must make substantial changes on the demand side and the supply side of public education.

On the demand side the changes are straightforward. Parents and students must be given the right to choose the school that the student will attend. Students must not be assigned to schools on the basis of geographic proximity or for other strictly administrative reasons. All students should attend schools that they have chosen. This is not to say that all students will attend the school that is their first choice. Schools for which there is excess demand will have to turn some students away. But those students who are unable to have their first choice should not automatically be consigned to the school closest to their home, or to any other school they have not chosen. Students who lose out on their first choice should have the chance to attend the school that is their second choice--or third or fourth choice, if necessary. If students are denied the right to make more than one choice, the system will not work for those students who are not accepted at the school they most prefer. Magnet school programs generally have this defect. Students who win acceptance to the magnet schools are made better off; students who are not accepted are left behind, sometimes worse off, in their neighborhood schools.

The shortcoming of magnet school programs points up a deeper problem in grafting a system of competition and choice onto an established educational system. That is, while it is relatively easy for a school system to restructure its demand side--to provide parents and students with some choice--it is very hard for a school system to restructure its supply side. Unfortunately, if the supply side of public education is not restructured, changes on the demand side will not generate many benefits.

For a market to work properly, there must be enough suppliers, and enough potential for the entry of new suppliers into the market, so that suppliers cannot dictate to consumers. If there are too few established suppliers, and no prospect of new suppliers, consumers will have no choice but to take what existing suppliers provide (assuming the good or service has no substitutes--is a necessity--which is true of education). In a system effectively controlled by suppliers--a monopoly or oligopoly--the consumer is not sovereign; the demands of consumers are not driving the production of the good or service. The very point of creating a system of educational competition and choice, however, is to change the system of control--to increase the influence of the consumers of education and to decrease the influence of the monopoly suppliers. This cannot occur if parents

and students are given the right to choose schools, but the schools from which they must choose are tightly controlled by a single authority.

So, how must the supply of schools be changed? To begin with, no school should be entitled to students. Schools that are not chosen by students--say as a first, second, or third choice--should be closed. No student should be forced to attend a school that is so bad that no parent would voluntarily have his child attend it. Closed schools could then be reopened under new management, with new objectives, new programs, and perhaps even a new teaching staff. Of course, this raises the question of what should be done with the principals and teachers in schools that students reject and that therefore are not entitled to financial support. In a private market, the employees of a failed business must seek employment elsewhere. In a public school system, where tenure and other rules negotiated by unions protect the jobs of teachers according to seniority, many of the staff of closed schools are likely to be reassigned to successful schools, however unwelcome those staff may be. If a school system maintains all of the rules of job protection established prior to the installation of competition and choice, the supply of schools will ultimately fall far short of satisfying parent and student demand, and of raising system performance. This has been a problem in magnet school programs where the most talented teachers win assignments to the magnet schools and the less talented teachers are permitted to continue toiling in the traditional schools.

An obvious way around this kind of rigidity in the supply system, the kind that may force students to attend undesirable schools, is to allow teachers, principals, or any qualified entrepreneurs, including parents, to start schools on their own. If the only schools that are created are the ones that central educational authorities permit to be created, the sovereignty of parents and students will be undermined. If, on the other hand, schools are free to be created by any educational entrepreneurs that can win parental support (and meet government standards of eligibility as a school of choice), the demand for the kinds of schools that are wanted will ultimately be satisfied.

So-called entrepreneurial schools might exist within established educational systems and therefore be subject to the same personnel rules as other schools. But if this were so, the kinds of rules--for example, tenure and seniority--that can impede the efforts of principals and teachers to organize effectively would come under strong pressure for change. If entrepreneurial schools operated outside of established systems, the staff in those schools would have the right to vote to bargain collectively for the same job protection. But chances are the staff of autonomous entrepreneurial schools would not want or need the kinds of personnel rules found in public school systems. In any case, once students are not forced to attend schools they have not chosen, and educators are permitted to create schools that they believe students will choose, the key changes in the supply of public education will have been made.

There is one other important change in the supply of education that should accompany basic changes in the structure of educational supply and demand. Decisionmaking about school personnel and policy should be delegated to the school itself. Where truly basic changes have been made, decentralization will tend to occur naturally. Competition induces decentralization. In public systems of educational choice where basic changes in the structure of supply and demand have not been made, decentralization will not be as strongly encouraged, but it will be vigorously pursued nonetheless. In a system where schools know that their resources are dependent on their ability to attract students, schools will insist that they have the authority to organize and operate according to their best judgements of what students want and need. Central authorities will be hard pressed to retain control over many of the matters that they now dictate.

The sooner central authorities recognize that only decentralized decisionmaking--school autonomy--is consistent with the new kind of accountability provided by competition and choice, the better the chances a new system will have to work. In a competitive system of relatively autonomous schools, central authorities will still be able to contribute. They will be able to learn from the

market who the weak principals and the less competent teachers are, and which schools are ineffective. Authorities can then use this information to work constructively with--or ultimately to eliminate--problem personnel, and to preserve the autonomy of successful teachers and principals. Systems of open enrollment could readily operate with central authorities performing in this new capacity.

15. How successful have actual systems of competition and choice been?

Genuine systems of competition and choice do not yet have much of a track record. Magnet schools and limited forms of open enrollment have been tried in hundreds of school systems around the country. These experiments have generally proven popular with parents and students, and have been credited with improving education of the students fortunate enough to attend schools of choice.[39] Magnet systems have also had some success in promoting desegregation, a goal that first brought many of the magnet programs into existence. But whatever the virtues of these innovations, they only hint at the prospective consequences of competition and choice. Virtually none of the existing innovations has made the kinds of changes in the demand and supply sides of public educational systems that are necessary for the results of competition and choice to be adequately observed. The results of the many experiments with competition and choice are encouraging, to be sure. But they are only encouraging: they are not confirming.

Nevertheless, there have been a few experiments with competition and choice that have made more radical changes in previous systems. These experiments support the concepts of competition and choice rather strongly. In East Harlem, New York, one of the poorest areas in the country, student achievement has been raised from the lowest in New York City to the median using a system of competition and choice that has multiplied the number, variety, and effectiveness of schools, while reducing the size and central control of them. In the state of Minnesota, students have been free to choose to attend any public school in any district in the state since the fall of 1987. The most comprehensive system of competition and choice in the United States, the Minnesota plan has not been operating long enough to gauge its effects on school performance. But the plan has proven to be workable administratively, and it has already resulted in abundant efforts by schools to reach out to students and parents. It has also encouraged school improvement without the actual transfer of many students--less than 1,000 so far. The mere threat of student departures seems to influence schools significantly. Finally, the Cambridge, Massachusetts educational system, faced with the increasing flight of affluent parents to private schools, created a system of elementary school choice in the early 1980s that has won back parents and satisfied the first or second choices of the overwhelming majority of students.

16. What kinds of results should we expect from a genuine system of educational competition and choice?

In an educational system in which schools compete for their funding from parents and students, who are free to choose among a range of existing and new schools, a number of desirable consequences are likely to result. Our research suggests, first, that the management of schools would be substantially decentralized. Schools would be given the autonomy to chart courses more consistent with the directions in which clients wanted schools to go. Second, this autonomy would be used by schools to shape their organizations in whatever ways proved most effective in meeting demands. All indications are that schools would tend to become more focused and mission-oriented, recruit stronger educational leaders, and develop more professional teaching staffs. Finally, schools and students would become more closely matched. A constellation of schools, different schools serving different kinds of students differently, would probably emerge. Each school would still accomplish the minimum goals set by the government- -for example,

providing four years of English, three years of mathematics, and so on, to high school graduates--but each school would meet requirements in different ways and pursue its own objectives as well. Some schools, for example, might stress the fine arts, others the liberal arts, others math or science, still others business and assorted occupations. But whatever the orientation of the school, it would tend to match the interests of its students.

These kinds of developments will lead schools to perform those educational functions desired by parents more effectively than they are now performed by public schools. For example, high schools whose very reason for being is to teach computer science will prepare students better in that subject than comprehensive high schools do today. But there is also reason to believe that schools of choice will better promote student achievement more generally. To begin with, our research shows that autonomous, effectively organized schools are more successful in bringing about student achievement, regardless of the caliber or family attributes of the student. Second, the experiences of magnet schools suggest that students achieve more when the school motivates students according to their diverse interests. Finally, parents should become more interested in and supportive of schools when they have gone to the trouble of selecting the schools their children attend. This too has occurred in magnet school experiments. The sum total of these forces--organizational, motivational, and parental--stands to be higher student achievement.

17. In a system driven by the demands of parents and students, many of whom do not really know what is best for them, won't schools that are unsound but superficially attractive flourish?

While a choice system driven partly by the demands of some frivolous parents might encourage the development of academically unworthy schools offering easy courses, no homework, and diplomas for all who stay four years, competition would tend to drive unworthy schools out of business over time. Parents and students would quickly learn that the schools conducting flashy, superficial programs were awarding degrees that employers and colleges did not respect, and providing "educations" that left students unable to function effectively as adults. Parents and students would quickly discover that schools offering more effective and no less interesting programs were more deserving of support. Ultimately there is no reason to believe that parents would not choose those schools with a proven record of educating students with the particular interests and capabilities of their children.

18. Even if a lot of frivolous schools do not flourish in a choice system, won't the children of uninformed or disinterested parents end up in mediocre schools?

A properly designed system of educational competition and choice would not relegate the children of apathetic or uneducated parents to mediocre schools. To begin with, many of the benefits of a market can be enjoyed by consumers regardless of their sophistication or level of information. In a competitive system, schools would recognize that because many parents and students are making informed choices, a school that did not strive to meet demands for quality would risk losing financial support. Hence all schools would be encouraged to improve, and parents who knew little about school quality, and enrolled their children in schools based only on geographic proximity, would nonetheless know that their schools had survived the competitive test. The uninformed parent would be served in much the same way as the hasty shopper in a supermarket: even the shopper who pays little attention to unit prices or to other indicators of value is well--served by the market--by the informed choices of millions of shoppers and the competitive pressures on producers to serve those shoppers best. This is not to say that some uninformed parents would not be taken advantage of by some schools in the short-run. But in the long run, competitive pressures would tend to force out of the market schools that did not serve parent needs relatively well.

Uninformed parents would not be served as well as informed ones, however. Those parents who care most about education would strive harder to match their children with the most appropriate schools. Of course this happens in today's educational system too. Parents who value education choose their homes based on the quality of local schools or, if they can afford to do so, send their children to superior private schools. But the inequities in the current system are no excuse for inequities in a new system.

To reduce inequities in a system of competition and choice, the government should take two measures. First, it should give schools a financial incentive to attract the children of uneducated, uninformed, and unconcerned parents. Schools that enroll students from such educationally disadvantaged families should receive additional support, perhaps $1,000 more per student. The government would need to decide what set of circumstances puts a student at an educational disadvantage, but it could use as a reasonable approximation the poverty standard it uses now for programs of compensatory education. The government could also use the money now spent at the federal and state levels for compensatory education to offer bonuses of $1,000 per student to schools enrolling the truly economically disadvantaged. These bonuses would not only encourage schools to reach out to those parents who would not make an informed choice, but would also encourage schools to take on the greater challenge of serving students who do not come to school already well prepared to learn.

The government could take one other step to reduce inequities in schools of choice. The government could take responsibility for informing parents about the choices available to them. The government could provide all parents with detailed information about school programs, orientations, faculties, and students. The government might also provide statistics on school performance such as graduation rates or test scores. Such statistics would have to be assembled with great care, however. The government could easily distort school programs by imposing narrow achievement measures that encourage schools to "teach to the tests."

As an alternative, and one that we believe would prove superior, the government could allow schools to provide whatever information they thought most useful for attracting parents, and then regulate the accuracy of the information provided. Recognizing that schools of choice would have strong incentives to communicate their virtues to prospective students and parents--and this might well include the publication of test scores and graduation rates--the government could opt to ensure "truth in advertising" rather than to provide information itself. In either case, by ensuring that parents are informed, and providing schools financial rewards for enrolling the educationally disadvantaged, the government could go a long way toward reducing inequities in a system of choice.

19. Because of the costs of transporting students away from neighborhood schools, won't systems of educational choice be more expensive than current systems?

A system of educational choice need not cost more than current educational systems, and might cost less. Transportation only raises costs significantly if the supply of schools is restricted to public schools as they are now constituted. If the supply of schools is allowed to respond to demand, the supply is likely to expand, with relatively small numbers of large comprehensive schools being replaced by larger numbers of small, specialized schools. This expansion could easily occur without the construction or acquisition of new facilities if several schools shared a building. "Schools within a school," as this concept is usually known, were used to more than double the number of schools in East Harlem's choice system. But however the supply expanded, students would find a significant number of choices within a distance that is now served by the transportation arrangements of public education systems.

Of course, if the supply of schools were not expanded, transportation would cost more, and either taxpayers or parents would have to pay for it. But these costs might not prove to be onerous, for they could be offset by administrative savings in operating a decentralized system. There is every reason to believe that the administrative structure of a public choice system would be less bureaucratized than today's public school systems, and look more like private educational systems, where competition compels decentralization and administrative savings. While the efficiency of a choice system might not reduce the costs of education substantially-- depending on how it is measured, administration only represents 5-20 percent of the costs of public education--the savings ought to be enough to offset any increased transportation costs, which are not now a large part of school budgets either.

20. Should private schools be permitted to participate in a choice system?

Private schools would not have to be included in a system of educational choice for such a system to work, but including private schools would raise the probability of success. The greatest obstacle to a successful system of educational choice is a restricted supply of schools. If students who are unable to attend the schools that they choose are compelled to attend schools that they would never choose, a choice system is not fully working. The system is mostly benefitting those students fortunate enough to attend their chosen schools. Those students forced to attend the schools that every student and educator who really cares about education is trying to flee may be made worse off. The solution to this problem, as we explained in our answer to question 14, is to decontrol the supply of schools--to allow unwanted schools to close and to encourage new, more responsive schools to open. Decontrol will be exceedingly difficult to accomplish within established systems of public education, however. Decontrol would be much easier to implement if the private schools were made part of the educational supply.

If a system of educational choice is implemented without private school participation, a provision would need to be made to permit new schools to organize in response to parental demand. If schools can only be organized by central educational authorities, the chances are great that the supply of new schools will not be adequate to meet parent and student demand. Central authorities will be pressured by teacher unions and constrained by the rules of personnel systems not to close old schools or create new schools by transferring, dismissing, or even "counseling out" unwanted teachers. While competitive pressures will make it more difficult for central authorities to protect and maintain ineffective schools, central authorities will certainly not permit the supply of schools to respond to demand in the way a market of autonomous schools would respond. Unfortunately, to the extent that a system of competition and choices fails to shift school organization and control from top-down regulation to bottom-up self-determination, the new system will fail to improve school performance. Thus it is essential for even a fully public system of educational choice to permit principals, teachers, or entrepreneurs, free from central administrative control, to organize schools when they see the demand for particular kinds of schools going unfilled.

If any group of parents or any educational entrepreneur is free to organize a school to be funded by the public system of educational choice, however, it is but a small step further to include private schools. To illustrate, what would be the difference between a public school of choice organized autonomously by a group of educators and parents, and a private school? The autonomous public school would need to satisfy eligibility criteria--for example, requiring particular courses, and meeting safety standards--but private schools must already satisfy many state regulations, too. Indeed, a public choice system might well adopt the minimal kinds of regulations now imposed on private schools to specify what autonomous public schools of choice would have to do. But however autonomous public schools of choice came to be regulated, they would actually look a lot like private schools--provided the new public schools were genuinely autonomous. In an effective

system of public educational choice, then, there would be little difference, besides funding, between public and private schools, and less reason for prohibiting private school participation.

There is, moreover, a very good reason for including private schools in a choice system. Private schools would immediately expand the educational supply, the range of educational options. Private schools would ensure that the educational supply would not be dependent entirely on the entrepreneurship of educators willing to bear the risks of starting new schools or on the responsiveness of central educational authorities. Private schools would immediately inject competition into the educational system, for in most states private schools are in abundance. Nationwide, one out of every five schools is private. (In Wisconsin, nearly one out of every three schools is private.)[40] If tapped, the ready supply of educational options in the private sector would ensure that more parents provided with school choice would actually have their demands fulfilled. Without private school participation, a choice system could easily prove less responsive.

21. Wouldn't private school participation in a choice system destroy public education?

In contemplating the effects of private schools on a system of educational choice, it is important to distinguish between public schools and public education. Private school participation in a system of educational choice might indeed cause some public schools to go out of business; some public schools could be destroyed. But this is not the same as saying public education would be destroyed. Far from it. The objective of a system of educational choice is to strengthen public education, to improve the quality of education that is provided with government funds under general government supervision. If a choice system were to raise the average level of achievement of American students by encouraging competition among and between public and private schools, that reform would be revitalizing public education, not destroying it. Educational reform should ultimately be evaluated in terms of its effects on students, not on schools.

It should be pointed out, moreover, that private schools might be changed as much as public schools by a system of educational choice. Private schools that elected to participate in a choice system would become wholly, or almost wholly, supported by public funds, and fully subject to the (hopefully minimal) regulations imposed on public schools of choice. Participating private schools would therefore be hard to distinguish from public schools. And the distinction would literally disappear if participating private schools were not permitted to charge tuition on top of the payment received from public education authorities. Because most private schools now operate with far less revenue per pupil than public schools, many private schools would probably not object to operating without supplementary tuition. Any system that awarded private schools a sum approaching the current per-pupil expenditure in public schools would make most private schools better off.

Still, some schools, public and private, might want to charge tuition in excess of their per-pupil allotment. Whether this should be permitted is not a question we can answer, for it depends heavily on value judgements that can only be made by the political process. Permitting participating private schools to charge tuition beyond the public expenditure would permit those parents wanting "more" education for their children, and able to pay more, to purchase a more expensive education without having to foot the whole bill themselves. The virtue in this is that more children would be able to avail themselves of a potentially (though not necessarily) superior education than are able to currently, either because they cannot now afford tuition at elite private schools or mortgage payments in the neighborhoods of elite public schools. But there is a possible price to pay for satisfying parents with high educational demand. Permitted to charge additional tuition, schools would have an increased incentive to try to attract affluent students, and the means to create large inequities in the student composition and financial resources of schools. These inequities may not be as large as those that plague public education today, but it remains the

responsibility of the political process to decide whether those inequities are too great to justify the benefits that tuition add-ons might provide for many students.

It is also the job of the political process to settle one other issue of private school participation. The majority of private schools in this country are parochial or religiously-oriented institutions. While there is plenty of reason to believe that these schools provide very good academic educations, better on average than public schools, there is at least some reason to exclude parochial schools from participation in a public system of educational choice.[41] Americans may still believe, as they once did, that religion can interfere with the social integration that schools are trying to accomplish, and that religious schools should not therefore be aided by the government. The Constitution provides additional support for this view. But there are enough constitutional precedents for public support of students who choose to be educated in religiously-oriented institutions--for example, government grants for private higher education, and special government programs for poor or handicapped children attending religious schools--to indicate that the courts would permit parochial school participation in a choice system. Ultimately, the question of parochial school participation probably hinges more on the views of the public and less on the views of the courts, since the courts have no clear cut precedents to guide them. Be this as it may, before parochial school participation can be urged, value judgements must be made. We cannot say whether the potential benefits of opening up many good (and currently under-enrolled) religious schools to public school students is worth the potential costs of providing some public encouragement to the dissemination of religious values.

22. What, in conclusion, are the most important points for school reformers to bear in mind?

If our research into the causes of school performance is basically on target, it holds several simple but important lessons for school reformers. The first is that school performance can easily be undermined by school reformers. If reformers believe, as many certainly do, that greater effectiveness can be obtained from schools through enlightened regulation and training, reformers are likely to be proven wrong. The qualities that effective schools most need to possess--ambitious academic goals, strong educational leadership, professional staff organization--cannot easily be imposed or taught by education reformers or government authorities. Indeed, external efforts to force school change, however well-intentioned, can make schools worse. The reason is that the organizational requisites for effectiveness tend to develop not when schools are told how to operate, but rather, when they are given the autonomy to develop their organizations themselves.

The second lesson of our research, then, is that school reformers should provide more discretion and authority to the schools. More decisions about personnel, curriculum, instruction, and discipline should be made by principals and teachers, and fewer decisions should be made by state legislatures, school boards, and superintendents. Educational policymaking should be substantially decentralized.

The third lesson, however, is that decentralization must involve more than the restructuring of public school administration. If schools are to be provided with meaningful autonomy--the kind that gives schools more adequate flexibility to tailor their staffs and their programs to the needs of their students, and thereby to improve the performance of their schools --decentralization cannot be accompanied by elaborate administrative accountability systems. To the extent that schools are required to make decisions and produce outputs according to the specifications of central education authorities, the value of autonomy for school improvement will be reduced. The only way to preserve autonomy and accountability too is to move to an alternative system for ensuring accountability. If our research is correct, the most promising alternative to a system of political and administrative control is a system that controls schools through the market. Public educational systems governed by the forces of school competition and parental choice are far more likely than

current educational systems to encourage the development of autonomous schools that perform effectively.

There is a fourth and final lesson, however. If a system of educational choice is to make a significant difference in school performance, it must be freed from a key source of control now exercised by public school authorities. It will not be enough for reformers to grant parents the right to choose their childrens' schools. If the schools from which parents must choose remain under the firm control of central education authorities, parents will not have a real choice, and the system will not be subjected to the market forces that promise to change school organization and performance. Choice is relatively meaningless if the choices are not permitted to change. Hence, reformers should recognize that the most crucial reform for them to make, if parental choice is to promote real school improvement, is to end the monopoly that public school systems have long exercised over the supply of schools.

Limited forms of parental choice are steps in the right direction, to be sure. But partial measures are precisely the kinds of measures that public education systems are most likely to undo. If educational choice is to make a real difference, it must be given a real chance.

FOOTNOTES

1. Because this paper was written primarily to inform education reformers about the practical implications of our research on public and private schools, and not to report the results of our research directly, this paper does not provide extensive primary or secondary documentation of our arguments or findings. Readers interested in detailed supporting material can find it in our other publications, especially John E. Chubb and Terry M. Moe, *What Price Democracy? Politics, Markets, and America's Schools* (Washington, D.C.: The Brookings Institution, 1989, Forthcoming); John E. Chubb and Terry M. Moe, "Politics, Markets and the Organization of Schools," *American Political Science Review*, 82, 4 (December 1988): 1065-1087; and John E. Chubb, "Why the Current Wave of School Reform Will Fail," *The Public Interest*, 90 (Winter 1988): 28-49. In this paper we will document only those arguments or conclusions not documented in our other published work.

2. U.S. Congressional Budget Office, *Trends in Educational Achievement* (April 1986), ch. 3; Office of Educational Research and Improvement, U.S. Department of Education, *Youth Indicators 1988: Trends in the Well-Being of American Youth* (August 1988): 68-69.

3. U.S. Congressional Budget Office, *Trends in Educational Achievement* (April 1986), ch. 3.

4. The College Board, "News from The College Board," (September 20, 1988), table entitled, "College-Bound Seniors, SAT Score Averages, 1967-1988."

5. "Data Bank," *Education Week* (February 18, 1987): 19-21.

6. Office of Educational Research and Improvement, U.S. Department of Education, *Youth Indicators 1988: Trends in the Well-Being of American Youth* (August 1988): 52.

7. Ibid., pp. 52-55.

8. This and the following examples are discussed in U.S. Congressional Budget Office, *Trends in Educational Achievement* (April 1986): 43, 46.

9. William J. Bennett, U.S. Secretary of Education, *American Education: Making It Work* (April 1988): 13.

10. Office of Educational Research and Improvement, U.S. Department of Education, *Youth Indicators 1988: Trends in the Well-Being of American Youth* (August 1988): 64-65.

11. William J. Bennett, U.S. Secretary of Education, *American Education: Making It Work* (April 1988): 12.

12. Barbara Wobejda, "Survey of Math, Science Skills Puts U.S. Students at Bottom," *Washington Post* (February 1, 1989): A1, 14.

13. On school reform in the 1960s and 1970s see especially Diane Ravitch, *The Troubled Crusade: American Education 1945-1980* (New York: Basic Books, 1983).

14. Calculated from the following tables: U.S. Bureau of the Census, "Public Elementary and Secondary School Estimated Finances, 1970 to 1987, and by State, 1987," *Statistical Abstract of the United States: 1988* (Washington, D.C., 1988): table no. 217; and U.S. Bureau of the Census, "Estimated Public School Expenditures, 1970, and Personal Income, 1968, by States," *Statistical Abstract of the United States: 1970* (Washington, D.C., 1970): table no. 181.

15. William J. Bennett, U.S. Secretary of Education, *American Education: Making It Work* (April 1988): 45.

16. Per pupil current expenditures in Catholic high schools averaged $2,690 in 1987-88. Conversation with Fred Brigham of the National Catholic Education Association, Washington, D.C., February 8, 1989.

17. Calculated from the following tables: U.S. Bureau of the Census, "Public School Finances, 1975 to 1981, and by State, 1981," *Statistical Abstract of the United States: 1982-83* (Washington, D.C., 1982): table no. 271; and U.S. Bureau of the Census, "Estimated Public School Expenditures, 1970, and Personal Income, 1968, by States," *Statistical Abstract of the United States: 1970* (Washington, D.C., 1970): table no. 181.

18. Salary figures were obtained from: U.S. Bureau of the Census, "Public Elementary and Secondary Schools--Number and Average Salary of Classroom Teachers, 1960 to 1987, and by State, 1987," *Statistical Abstract of the United States: 1988* (Washington, D.C., 1988): table no. 211; and U.S. Bureau of the Census, "Public Elementary and Secondary Schools--Estimated Number and Average Salary of Classroom Teachers, States: 1970," *Statistical Abstract of the United States: 1970* (Washington, D.C., 1970): table no. 185. Pupil-teacher ratios were obtained from: Eric A. Hanushek, "The Economics of Schooling: Production and Efficiency in Public Schools," *Journal of Economic Literature*, 24 (September 1986): 1148; and for the most recent year, Nancy Protheroe, Educational Research Service, Arlington, Virginia, information provided by phone.

19. Eric A. Hanushek, "The Economics of Schooling: Production and Efficiency in Public Schools," *Journal of Economic Literature*, 24 (September 1986): 1149.

20. Glen E. Robinson and Nancy J. Protheroe, Cost of Education: *An Investment in America's Future* (Arlington, Virginia: Educational Research Service, 1987).

21. Ibid., p. 18.

22. William J. Bennett, U.S. Secretary of Education, *American Education: Making It Work* (April 1988): 46.

23. Ibid.

24. National Center for Education Statistics, U.S. Department of Education, "Staff Employed in Public School Systems, by Type of Assignment and by State: Fall 1983," *Digest of Education Statistics, 1985-86* (Washington, D.C., September 1986): table 47.

25. On centralization and consolidation in American public education see especially David B. Tyack, *The One Best System: A History of American Urban Education* (Cambridge: Harvard University Press, 1974); and Roald I. Campbell, et al., *The Organization and Control of American Schools*, 5th ed. (Columbus, Ohio: Charles E. Merrill, 1985).

26. William J. Bennett, U.S. Secretary of Education, *American Education: Making It Work* (April 1988): 45.

27. The College Board, "Number of SAT Candidates with Verbal and Math Mean Scores and Standard Deviations for Each State from 1971-72 through 1987-88," Memorandum supplied by The College Board.

28. National Center for Education Statistics, U.S. Department of Education, "Years of School Completed by Persons 25 Years Old and Over, by State: April 1980," *Digest of Education Statistics, 1985-86* (Washington, D.C., September 1986): table no. 11; and (citation for 1970 data to be supplied).

29. The following expenditure statistics were obtained from: U.S. Bureau of the Census, "Public Elementary and Secondary School Estimated Finances, 1970 to 1987, and by State, 1987," *Statistical Abstract of the United States: 1988* (Washington, D.C., 1988): table no. 217; and U.S. Bureau of the Census, "Estimated Public School Expenditures, 1970, and Personal Income, 1968, by States," *Statistical Abstract of the United States: 1970* (Washington, D.C., 1970): table no. 181. Salary figures were obtained from: U.S. Bureau of the Census, "Public Elementary and Secondary Schools- -Number and Average Salary of Classroom Teachers, 1960 to 1987, and by State, 1987," *Statistical Abstract of the United States: 1988* (Washington, D.C., 1988): table no. 211; and U.S. Bureau of the Census, "Public Elementary and Secondary Schools--Estimated Number and Average Salary of Classroom Teachers, States: 1970," *Statistical Abstract of the United States: 1970* (Washington, D.C., 1970): table no. 185. The most recent pupil-teacher ratios were provided by Nancy Protheroe, Educational Research Service, Arlington, Virginia, by phone.

30. National Center for Education Statistics, U.S. Department of Education, "Staff Employed in Public School Systems, by Type of Assignment and by States: Fall 1983," *Digest of Education Statistics, 1985-86* (Washington, D.C., 1986): table 47.

31. U.S. Congressional Budget Office, *Educational Achievement: Explanations and Implications of Recent Trends* (August 1987): 30-31.

32. U.S. Congressional Budget Office, *Trends in Educational Achievement* (April 1986): 31-39.

33. U.S. Congressional Budget Office, *Educational Achievement: Explanations and Implications of Recent Trends* (August 1987): 32-35.

34. Ibid.

35. Eric A. Hanushek, "The Economics of Schooling: Production and Efficiency in Public Schools," *Journal of Economic Literature*, 24 (September 1986): 1141-1177.

36. For the most recent comprehensive review of this literature see Ibid.

37. For a friendly, comprehensive critique of the Effective Schools Literature see Stewart C. Purkey and Marshall S. Smith, "Effective Schools: A Review," *Elementary School Journal*, 83, 4 (1983): 427-452.

38. For example, see Linda Darling-Hammond, "The Over-Regulated Curriculum and the Press for Teacher Professionalism," *NASSP Bulletin* (April 1987).

39. For a survey of educational choice experiments see Mary Anne Raywid, "The Mounting Case for Schools of Choice," unpublished manuscript, Hofstra University (May 1988).

40. National Center for Education Statistics, U.S. Department of Education, "Number of Schools, by Level and Control and by State: 1982-83," *Digest of Education Statistics, 1985-86* (Washington, D.C., September 1986): table 8.

41. See especially James S. Coleman and Thomas Hoffer, *Public and Private High Schools: The Impact of Communities* (New York: Basic Books, 1987).

ABOUT THE INSTITUTE

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